Information Retrieval System for Japanese Standard Disease-Code Master Using XML Web Service

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Abstract

Information retrieval system of Japanese Standard Disease-Code Master Using XML Web Service is developed. XML Web Service is a new distributed processing system by standard internet technologies. With seamless remote method invocation of XML Web Service, users are able to get the latest disease code master information from their rich desktop applications or internet web sites, which refer to this service.

Introduction

We recently developed and published Japanese Standard Disease-Code Master (unified Japanese disease names and codes master for electronic medical records). World Wide Web page based master information search service is released for users, although it has functional limitation of HTML based service such as server session timeout. XML Web Service is a new distributed processing system, utilizes internet based technologies such as XML or HTTP. We developed new information retrieval system for the master using this sophisticated, internet-oriented technology.

Methods

Hardware: Intel CPU based Dual PentuimIII Server
Software: Internet Information Service and .Net Framework running on Windows2000 Server SP2.
Database: Microsoft Access2000 and Microsoft SQLServer2000.
All methods are coded by C#(Csharp) language.
The service is released to the internet at URL:
http://www.dis.h.u-tokyo.ac.jp/webservices/

Outline of the XML Web Service

GetVerision -get current master version string:
GetICD10Title -get the title of ICD10 by ICD code
EnumDiseaseNames -get all disease name records
DiseaseNameSearch -search disease names by word
ResembleDiseaseName -search resemble disease name in the master for any disease names
RegulateDiseaseName -reconstruct disease names to the combination of other disease names and modifiers.
ConvertString -convert string to standard format of the master.

Result and Evaluation

For evaluation, a desktop disease name search application using web methods is developed by C#. (Fig1) Throughout several search method tests, response is at least equal to similar stand-alone search application, even if the test application run on the computer connected to the internet by a dial-up phone line.

Conclusion

This is the first Japanese medical term information service using XML Web Service. Although this system is in the test phase from the aspect of stability and reliability of the service, test results show possibilities of this technology for medical term information services.

Reference

Kenji Hatano, Kazuhiko Ohe. Lexical analysis of disease name vocabularies for automatic translation to the new disease-code master. Japan Journal of Medical Informatics. 22 suppl. 2002. (In Japanese)

Fig.1 Test Application using Web Service